

## WHAT IS CLAIMED IS:

1. A system for detecting fraud in a prepaid system, said fraud detecting system comprising:

an interface to said prepaid system, wherein said prepaid system accounts for subscriber account credits and subscriber account debits to thereby determine a subscriber prepaid balance for use in operating said prepaid system, wherein said prepaid system interface accepts prepaid account credit information from said prepaid system;

an interface to a service system, wherein said service system interface accepts information with respect to services provided; and

control logic utilizing said prepaid account credit information accepted through said prepaid system interface and said information with respect to services provided accepted through said service system interface to thereby determine a fraud detection subscriber account balance, wherein said control logic utilizes said fraud detection subscriber account balance to determine a fraud condition in an associated subscriber account independent of said determination of said subscriber prepaid balance by said prepaid system.

2. The system of claim 1, wherein said prepaid system comprises a prepaid calling system.

3. The system of claim 2, wherein subscriber units utilizing said prepaid calling system store a secure prepaid credit value on a subscriber unit.

4. The system of claim 2, wherein said prepaid calling system stores secure prepaid credit values for a plurality of subscribers in a centralized memory.

5. The system of claim 1, wherein said prepaid account credit information accepted by said prepaid system interface is information with respect to refill of a corresponding subscriber account.

6. The system of claim 5, wherein said refill information includes a refill amount and time information with respect to said refill amount.

7. The system of claim 1, wherein said service system comprises a wireless communication system.

8. The system of claim 1, wherein said information with respect to services provided includes substantially unprocessed service data associated with a particular subscriber service transaction.

9. The system of claim 8, further comprising:  
service rating information stored in communication with said control logic, wherein said substantially unprocessed service data includes information provided by components of said service network sufficient for allowing a determination of service value using said service rating information.

10. The system of claim 9, wherein said service rating information is provided to said fraud detecting system by said prepaid system.

11. The system of claim 9, wherein said service rating information includes information with respect to a time at which particular rating information is to be effective.

12. The system of claim 9, wherein said substantially unprocessed service data includes information with respect to a calling party, information with respect to a called party, and information with respect to a length of a call.

13. The system of claim 12, wherein said information with respect to a length of a call includes information with respect to a time of said call.

14. The system of claim 12, wherein said substantially unprocessed service data is accompanied by substantially processed data, wherein said substantially processed data is culled by said fraud detecting system.

15. The system of claim 14, wherein said substantially processed data includes a determination of service value by a system external to said fraud detecting system.

16. The system of claim 15, wherein said system external to said fraud detecting system is a billing system of said service system.

17. The system of claim 1, wherein said fraud condition determination is made at least in part through comparison of said fraud detection subscriber account balance to a predetermined threshold value.

18. The system of claim 17, wherein said threshold value is selected to accommodate an acceptable amount of difference in a subscriber account balance as determined by said prepaid system and said fraud detecting system.

19. The system of claim 18, wherein said threshold value is a negative value.

20. The system of claim 1, wherein said fraud condition determination includes a hierarchy of fraud determinations.

21. The system of claim 20, wherein said hierarchy of fraud determinations includes a first fraud condition determination having a first response associated therewith and a second fraud condition determination having a second response associated therewith.

22. The system of claim 21, wherein said first fraud condition determination is made at least in part through comparison of said fraud detection subscriber account balance to a first predetermined threshold value, and wherein said second fraud condition determination is made at least in part through comparison of said fraud detection subscriber account balance to a second predetermined threshold value, wherein said first predetermined threshold value is greater than said second predetermined threshold value.

23. The system of claim 21, wherein said first fraud condition is associated with a suspicion of fraud and said second fraud condition is associated with a conclusion of fraud.

24. The system of claim 21, wherein said first response includes a notification transmitted to said prepaid system by said fraud detecting system, and wherein said second response includes information with respect to subscriber activity suspension transmitted to said service system.

25. The system of claim 1, wherein, when said determination of said fraud condition by said control logic indicates an unacceptable level of fraud, information with respect to subscriber activity suspension is transmitted to said service system to thereby prevent further use of said service system by an associated subscriber.

26. The system of claim 1, wherein said control logic further utilizes said information with respect to services provided accepted through said service system interface to determine charges with respect to said service system associated with use of said prepaid system.

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27. A method for detecting fraudulent use of a service network associated with a prepaid system, said method comprising:

interfacing a fraud detection system to said prepaid system, wherein said prepaid system accounts for subscriber account credits and subscriber account debits to thereby  
5 determine a subscriber prepaid balance for use of said service network;

interfacing said fraud detection system to said service network, wherein said service network provides communication of subscriber information and generates transaction information associated with communication of said subscriber information;

accepting prepaid account credit information from said prepaid system at said fraud detection system;

accepting transaction information from said service network at said fraud detection system;

determining a service value using said accepted transaction information; and

determining a fraud condition in an associated subscriber account as a function of said accepted prepaid account credit information and said service value determined.

28. The method of claim 27, wherein said accepted prepaid account information comprises information with respect to subscriber account value refill by an associated subscriber.

29. The method of claim 28, wherein said accepted prepaid account information further comprises information with respect to a time of said subscriber account value refill.

30. The method of claim 28, wherein said accepted prepaid account information further comprises service rating information.

31. The method of claim 27, wherein said prepaid system is a prepaid calling system, and wherein said method further comprises:

said prepaid calling system interacting with subscribers to determine a subscriber account credit.

32. The method of claim 31, wherein said prepaid account credit information accepting step is performed in close temporal proximity to said interaction between said subscriber and said prepaid calling system.

33. The method of claim 32, wherein said close temporal proximity is substantially immediately after completion of said interaction between said subscriber and said prepaid calling system.

34. The method of claim 27, wherein said service network comprises a voice communication network, and wherein said method further comprises:

at least one network element of said service network generating data of said transaction information.

35. The method of claim 34, wherein said voice communication network comprises a cellular wireless communication network.

36. The method of claim 34, wherein said at least one network element is a network element of said service network utilized in providing communication of subscriber information in a transaction associated with said transaction information.

37. The method of claim 36, wherein said at least one network element is a network switch.

38. The method of claim 36, wherein said at least one network element is a mobile switching center.

39. The method of claim 34, wherein said transaction information accepting step is performed in close temporal proximity to said data generation.

40. The method of claim 39, wherein said close temporal proximity is substantially immediately after completion of said transaction.

41. The method of claim 34, wherein said transaction information includes information with respect to a calling party, information with respect to a called party, and information with respect to a length of a call.

42. The method of claim 34, wherein said generated data is substantially unprocessed when accepted at said fraud detection system.

43. The method of claim 42, wherein said substantially unprocessed generated data accepted at said fraud detection system is accompanied by substantially processed data, wherein said substantially processed data is culled by said fraud detection system.



44. The method of claim 42, wherein said substantially processed data includes a determination of service value by a system external to said fraud detection system.

45. The method of claim 44, wherein said system external to said fraud detection system is a billing system of said service network.

46. The method of claim 27, further comprising:  
determining a fraud detection subscriber account balance using said service value determined by said fraud detection system.

47. The method of claim 46, further comprising:  
periodically synchronizing said fraud detection subscriber account balance and said subscriber prepaid balance.

48. The method of claim 47, wherein said synchronizing is accomplished after a determination that an unacceptable fraud condition does not exist in said fraud condition determining step.

49. The method of claim 47, wherein said synchronizing is accomplished after a predetermined amount of credit value has been deducted from said subscriber prepaid balance.

50. The method of claim 47, wherein said synchronizing is accomplished after a predetermined amount of credit value has been added to said subscriber prepaid balance.

51. The method of claim 46, wherein said step of determining a fraud condition comprises:

comparing said fraud detection subscriber account balance to a predetermined threshold value.

52. The method of claim 51, further comprising:

determining said predetermined threshold value as a function of an acceptable difference between said subscriber prepaid balance as determined by said prepaid system and said fraud detection subscriber account balance as determined by said fraud detection system.

53. The method of claim 52, wherein said acceptable difference is associated with a difference in techniques to achieve said subscriber prepaid balance and said fraud detection subscriber account balance.

54. The method of claim 51, wherein said predetermined threshold value is negative.

55. The method of claim 51, further comprising:

selecting said predetermined threshold value as a function of a particular environment in which said fraud detection system is deployed.

56. The method of claim 51, further comprising:

selecting said predetermined threshold value as a function of a particular prepaid system for which fraud detection is provided.

57. The method of claim 51, further comprising:

selecting said predetermined threshold value as a function of a particular subscriber.

58. The method of claim 51, further comprising:

selecting said predetermined threshold value as a function of a particular category of subscriber.

59. The method of claim 51, further comprising:

selecting said predetermined threshold value as a function of a particular category of subscriber equipment.

60. The method of claim 27, further comprising:

selecting a first threshold value; and

selecting a second threshold value, wherein said first and second threshold values are utilized in determining a first and second fraud condition in said fraud condition determining step.

61. The method of claim 60, further comprising:

transmitting a signal for said associated subscriber account to said prepaid system when said first threshold value is exceeded; and

transmitting an account suspension signal for said associated subscriber account to said service network when said second threshold value is exceeded.

62. A method for detecting fraudulent use of a telephone network, said method comprising:

interfacing a prepaid calling system with said telephone network, wherein said prepaid calling system interacts with subscribers to provide credits to an associated subscriber prepaid account and said prepaid calling system interacts with said telephone network to debit subscriber prepaid accounts corresponding to subscriber use of said telephone network to thereby determine subscriber prepaid account balances;

selecting a fraud threshold value for use by a call data record server;

interfacing said call data record server to said prepaid calling system;

interfacing said call data record server to said telephone network;

accepting prepaid account credit information from said prepaid calling system at said call data record server, wherein said prepaid account information is accepted by said call data record server substantially at the completion of interaction between said prepaid calling system and said subscriber;

accepting subscriber call information from said telephone network at said call data record server, wherein said subscriber call information is accepted by said call data record server substantially at the completion of an associated call;

determining a value of a subscriber call using said accepted transaction information;

determining a call data server subscriber account balance using said determined subscriber call value and said accepted prepaid account credit information;

comparing said determined call data server subscriber account balance to said threshold value; and

determining if an unacceptable level of fraud is associated with a particular subscriber prepaid account as a function of said comparison.

63. The method of claim 62, wherein said prepaid calling system stores a secure prepaid credit value on subscriber equipment.

64. The method of claim 62, wherein said threshold value is selected as a function of a particular type of subscriber equipment.

65. The method of claim 62, wherein said threshold value is selected as a function of a particular subscriber.

66. The method of claim 62, wherein said threshold value is selected as a function of a particular type of subscriber.

67. The method of claim 62, wherein said accepted prepaid account information comprises information with respect to subscriber account value refill by an associated subscriber.

68. The method of claim 67, wherein said accepted prepaid account information further comprises call rating information, wherein said call rating information is utilized by said call data server subscriber account balance determining step.

69. The method of claim 62, further comprises:  
at least one network element of said telephone network generating data of said subscriber call information, wherein said at least one network element is utilized by said telephone network in providing a call associated with said generated data.

70. The method of claim 69, wherein said generated data is substantially unprocessed when accepted at said call data server.

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